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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/101,569	10/14/1998	HANNU KARI	10178.46USWO	9814

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EXAMINER

PHAN, MAN U

ART UNIT

PAPER NUMBER

2664

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.
09/101,569

Applicant(s)
Karl et al.

Examiner
Man Phan

Art Unit
2664



— The MAILING DATE of this communication appears on the cover sheet with the correspondence address —

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Oct 14, 1998
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 35 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirements

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☒ All b) ☐ Some* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- *See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892) 18) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 16) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948) 19) ☐ Notice of Informal Patent Application (PTO-152)
- 17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 5, 6 20) ☐ Other: _____

DETAILED ACTION

1. The application of Kari et al. for a "Packet radio network with charging information collected by nodes and forwarded to billing centre" filed 10/14/1998 has been examined. This application is a 371 of PCT/PI97/00019 filed 01/14/1997. This application claims foreign priority based on the application 960183 dated 01/15/1996 filed in Finland. A preliminary amendment to the claims have been entered and made of record. Claims 1-13 are pending.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37

CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103© and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hayes (US#5,732,127) in view of Adams et al. (US#5,168,498).

With respect to claims 1-13, both of these references teaches the capability of effectively and efficiently carrying out charging in a mobile telephone network. Hayes discloses a telecommunications switch serving a roaming mobile station *transports the resulting billing records by setting up a communication link with an administrative billing center connected to a Signaling System No. 7 (SS7) telecommunications network.* By utilizing Signal Connection Control Point (SCCP) signals, *all charging records are transported from each local exchange to the administrative center by SCCP signals.* Because of the hierarchical architectural and strict timing requirements required in SS7 telecommunications networks, the implementation of the present invention allows the telecommunications network to continue providing existing telecommunications services to roaming subscribers while detecting illegal usage with minimum time delay. The present invention further allows the telecommunications network to provide and support subscriber features and telecommunications services that require both billing records and normal telecommunications data at the same time using the same network on a real-time basis. In one aspect, the present invention provides a method and apparatus of handling

accounting messages in the SS7 telecommunications network in which *accounting messages are transported to the administrative billing center by SS7 SCCP signals*. In another aspect, the present invention provides a SS7 telecommunication network wherein one of the nodes connected to the SS7 telecommunication network is an *administrative billing center and all billing records are transported to the billing center* according to the SS7 protocols (Fig. 12; Col. 2, lines 16 plus).

However, Hayes does not expressly disclose the step wherein the packet radio connected to the mobile communication network which provides them with a radio interface for packet switched data transmission with the packet data terminal equipments. In the same field of the endeavor, Adams et al. (US#5,168,498) teaches in Fig. 2 a system for mobile communication includes a number of base stations 10, 13, 16, 20, 23, 26 with users 30, 31, 45 and 46. Associated with each base station is an interface unit 10a, 13a, 16a, 20a, 23a and 26a which *packetises voice information* and includes header information concerning *user and destination addresses*. These interface units tracks the movement of the various user by passing control blocks from interface unit to interface unit. The users 30, 31 will communicate to the base station 13 and digital voice signals and other information therefrom will pass to the control interface 13a which will generate control information and *packetised voice information* which will pass via routing block 40 (which is a cross connector/concentrator) and switches 50 and 52 to routing block 41 (also a cross connector/concentrator) to base stations 23 via control interface 23a. In addition to generating control information, the interface 13a will *generate a packetised voice destination address for each user to be received* by the interface board 23a of the

associated remote user. This destination address accompanying the *voice packet* allows the switches 50-52 to determine how to route the call to ensure receipt at the correct destination (Col. 2, lines 30 plus). Adams further teaches in Fig. 4 illustrated the base station and associated interfacing of Fig. 2 in which a packet counter 70 will count outgoing packets and provide the count and the connection number associated with the packets to allow *charging information to be calculated* in block 72 under the control of microprocessor 61. The microprocessor 61 will also have access to base station signaling information from connection 74 and *packetised signaling information* from the remote stations via packetiser-depacketiser 68. The microprocessor will route information on the free connection numbers for store 62 and customer identify information for store 63 (Col. 4, lines 41 plus).

One skilled in the art would have recognized the need for efficiently providing a method and system for carrying out charging in packet radio networks, and would have applied Adams's novel use of the packetising control information and packetising data information into Hayes's teaching of the transport charging records to a centralized administrative center in a mobile telephone network. Therefore, It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to apply Adams' mobile communications system into Hayes's real-time network for distributed telecommunication accounting systems with the motivation being to provide a system and method for a packet radio network with charging information collected by nodes and forwarded to billing center.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The Sawyer (US#5,828,737) is cited to show the communications service billing based on bandwidth use. In a bandwidth-on-demand type communications system, like that provided with a code division multiple access (CDMA) cellular communications system, charging subscribers for calls based on communications length provides an inaccurate measure of communication cost, and further serves to discourage use of the system for data transmission applications. To provide a more accurate cost determination, the amount of bandwidth used by each communication is metered and multiplied by a charging rate. In particular, measurements of the maximum amount of bandwidth used during predetermined time intervals are made during the course of each communication, with the maximum bandwidth measurements being summed to determine an estimate of the total amount of bandwidth used during the communication. The charge for the communication is then determined by multiplying the estimated total bandwidth measurement by a charging rate multiplier.

The Glitho et al. (US#5,875,238) is cited to show the transport mechanism for accounting messages within a telecommunications system. A telecommunications switch serving a roaming mobile station transports the resulting billing records by setting up a communication link with an administrative billing enter connected to a Signaling System

No. 7 (SS7) telecommunications network by utilizing Transaction Capabilities Application Part (TCAP) signals. Once the connection is established between the telecommunication switch and the administrative billing center, Data Message handler (DMH) formatted data are stored into the S7 TCAP Invoke signal by the telecommunication switch and transported to the administrative billing center via the SS7 telecommunications network.

The Tuohino et al. (US#6,115,600) is cited to show a method for improving charging criteria in a mobile telephone network. Charging criteria in a mobile telephone network may be improved by choosing one cell or a group of several cells of the mobile telephone network as a group of special cells. The cells of the group may be located in the areas of different MSC's. When a call is being established, a service control point SCP located in an intelligent network analyses whether the location cell of a calling subscriber and that of a called subscriber belong to the group of special cells. Subscriber numbers of the subscribers may also be taken into account. The service control point SCP then applies a special charging criterion determined for the group. In a case where the location cell of the calling subscriber and that of the called subscriber are located in separate MSC areas (MSC1/SSP1, MSC2/SSP2), the information on the location cell of the called subscriber is transmitted to the service control point (SCP1) connected to the mobile switching center (MSC1/SSP1) of the calling subscriber either directly or in a message in accordance with signaling used between MSC's.

The Mechling et al. (US#5,873,030) is cited to show a method and system for

nationwide mobile telecommunications billing. The method any system for nationwide mobile telecommunications billing provides improved efficiency in billing for mobile services. Local mobile networks are communicatively connected by signaling network to a national mobile service platform (NMSP). Traffic event information generated by local mobile networks is collected directly by the NMSP. Traffic event information generated by local landline networks and long distance networks is also collected by the NMSP. The NMSP processes all traffic events for all calls, generates all necessary billing information and returns resulting billing information to other networks only when necessary. In order to simplify NMSP processing, all billing information collected from other networks is formatted to form uniform master call detail records (MCDR). Each MCDR contains all the information necessary for the NMSP to perform its processing. Each MCDR is rated, then billing information is generated.

The Granberg (US#6,195,543) is cited to show the method and apparatus for providing advice of charge parameters for mobile radio telephone calls. A control point administers an Advice of Charge (AoC) service provided to mobile subscribers. The control point is informed of each call involving a mobile station that subscribes to the Advice of Charge service. The control point determines one or more AoC parameters for the call and sends them to a switching node currently serving the mobile station. The mobile station receives the AoC parameters from the serving switching node and determines a prospective cost associated with the call and displays that cost to the mobile subscriber. Accumulated costs for that call may also be determined and displayed.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to M. Phan whose telephone number is (703)305-1029. The examiner can normally be reached on Mon - Fri from 6:30 to 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington Chin, can be reached on (703) 305-4366. The fax phone number for the organization where this application or proceeding is assigned is (703)305-3988.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3800/4700.

Mphan 

12/05/01.



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